

Claims

1 (Cancelled)

2. (Previously Presented) The apparatus of claim 28, wherein the bottom plate of the bushing attenuates the filaments, and said first position is closer to the bottom plate than said second position.

3-4 (Canceled)

5. (Previously Presented) The apparatus of claim 28, wherein said second nozzle is an air-atomizing nozzle.

6. (Previously Presented) The apparatus of claim 28, wherein the second nozzle emits water, said apparatus further comprising:

a first manifold, said first nozzle being coupled to said first manifold for conveying air thereto; and

a second manifold, said second nozzle being coupled to said second manifold for conveying water thereto.

7. (Previously Presented) An apparatus for cooling filaments in a filament forming process, the filaments attenuated from a bottom plate of a bushing, the apparatus comprising:

a bushing having a generally planar bottom plate;

a first air-emitting nozzle; and

a second fluid-emitting nozzle positioned downstream of said first nozzle, wherein said first and second nozzles point downwardly away from the bushing bottom plate; and a gathering shoe for gathering said filaments into a strand.

8.-10. (Canceled)

11. (Previously Presented) The apparatus of claim 7, wherein the second nozzle emits water, and further comprising:

a first manifold coupled to said first nozzle for conveying the air thereto;  
and  
a second manifold coupled to said first nozzle for conveying the water thereto.

12. (Previously Presented) The apparatus of claim 7, further comprising: a size applicator.

13. (Original) The apparatus of claim 12, wherein said first nozzle is directed toward a filament forming region between said bottom plate and said size applicator and in a direction downstream along the filaments relative to a plane parallel to said bushing bottom plate.

14. (Original) The apparatus of claim 13, wherein said first nozzle is oriented at an angle relative said plane, the angle being in the range of 0 to 35 degrees.

15.-27. (Canceled)

28. (Previously Presented) An apparatus for cooling filaments in a filament forming process comprising:

a bushing having a bottom plate;  
a first air-emitting nozzle located at a first position;  
a second fluid-emitting nozzle located at a second position downstream of said first nozzle, and  
a size applicator,  
wherein said first nozzle and said second nozzle are positioned upstream of the size applicator, wherein said first nozzle and said second nozzle are positioned downstream of said bushing, wherein said first and second nozzles point downwardly away from the bushing bottom plate; and

a gathering shoe for gathering said filaments into a strand.

29. (Previously Presented) The apparatus of claim 28, wherein the first nozzle does not emit water.

30. (Previously Presented) The apparatus of claim 7, wherein the first nozzle does not emit water.

31. (Previously Presented) An apparatus for cooling filaments in a filament forming process comprising:

a bushing having a bottom plate from which filaments emanate;

a first nozzle located at a first position for delivering compressed air for use in cooling the filaments emanating from the bottom plate of the bushing;

a second fluid-emitting nozzle located adjacent the filaments at a second position downstream of said first nozzle;

a size applicator downstream of the second fluid-emitting nozzle; and

a gathering shoe for gathering the filaments into a strand.

32. (Previously Presented) The apparatus of claim 31, wherein the first nozzle does not emit water.

33. (Previously Presented) The apparatus of claim 31, wherein the first and second nozzles emit water.

34. (Previously Presented) An apparatus for cooling filaments in a filament forming process comprising:

a bushing having a bottom plate from which filaments emanate;

a first nozzle located at a first position for cooling and drying the filaments emanating from the bottom plate;

a second fluid-emitting nozzle located at a second position downstream of said first nozzle;

a size applicator downstream of the second fluid-emitting nozzle; and  
a gathering shoe for gathering said filaments into a strand.

35. (Previously Presented) An apparatus for cooling filaments in a filament forming process comprising:

a bushing having a bottom plate from which filaments emanate;  
means for emitting air to the filaments emanating from the bottom plate;  
means for emitting fluid to the filaments downstream of the means for emitting air;  
a size applicator downstream of the means for emitting fluid to the filaments; and  
a gathering shoe for gathering said filaments into a strand.

36. (Previously Presented) The apparatus of claim 35, wherein the means for emitting air comprises an air-emitting nozzle.

37. (Previously Presented) The apparatus of claim 35, wherein the means for emitting fluid comprises a water-emitting nozzle.